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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/652,660

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EXAMINER

LEUNG, CHRISTINA Y

ART UNIT

PAPER NUMBER

2613

MAIL DATE

DELIVERY MODE

07/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/652,660

Applicant(s)

WATANABE, HARUKAZU

Examiner

Christina Y. Leung

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2006 and 12 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-8,10,11,13-16,18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) 8,10,11,13-16,18 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of group I, claims 1, 2, and 4-7, in the reply filed on 12 April 2007 is acknowledged. Since Applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. **Claims 8, 10, 11, 13-16, 18, and 19** are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12 April 2007 (see note above).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 2, and 4-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Korevaar (US 5,777,768 A)**.

Regarding **claims 1 and 2**, Korevaar discloses a free space optics communication apparatus which performs communication with another apparatus with light beams (Figures 3, 4A-B, and 5A-B), comprising:

a plurality of light-emitting units 26, each of the units emitting a light beam 20 which forms a generally elliptical irradiation pattern on the other apparatus (column 8, lines 7-8),

wherein the plurality of light-emitting units 26 are set such that irradiation patterns of light beams 20 from at least two of the plurality of light-emitting units overlap in the shorter diameter direction of the irradiation pattern of the light beam from the one light-emitting unit at a light-receiving unit of the other apparatus (for example, see irradiation patterns 78a and 78b as shown in Figure 5B; column 6, lines 16-22; column 8, lines 4-8; column 9, lines 29-36),

a width of a combined irradiation pattern formed by combining the light beams from the plurality of light-emitting units in a shorter diameter direction of an irradiation pattern of a light beam from one of the plurality of light-emitting units is larger than a width in the shorter diameter direction of the irradiation pattern of the light beam from the one light-emitting unit (the overlapping elliptical beams disclosed by Korevaar inherently have a combined width of beams that is larger by some amount than a width of one beam).

Examiner respectfully notes that Korevaar discloses that “irradiation patterns of light beams from at least two of the plurality of light-emitting units overlap in the shorter diameter direction of the irradiation pattern” at least in the sense that they disclose an arrangement of two elliptical irradiation patterns 78a and 78b as shown in Figure 5B which, given the divergence of the beams expressly disclosed by Korevaar, eventually “overlap in the shorter diameter direction of the irradiation pattern” at the receiver. The elliptical irradiation patterns 78c and 78d shown in Figure 5B also diverge and overlap in the shorter diameter direction of the irradiation pattern at the receiver.

Further regarding claims 1 and 2, Korevaar discloses overlapping beams and discloses a combined width of beams that is larger by some amount than a width of one beam, but Korevaar does not specifically disclose a particular ratio of the combined width to the width of one beam

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and does not specifically disclose that the combined width is 1.5 times, or 2 times, or more than a width of one beam.

However, Korevaar does clearly suggest that the amount of overlap and resulting width ratio of the combined transmitted light beams may be determined via routine experimentation, in order to arrive at the stated goal of a controlled overlap of beams to reduce signal fluctuations at the receiver (see column 6, lines 16-22; and column 9, lines 29-36). In other words, Korevaar has recognized that the amount of overlap and width ratio is a variable for achieving a recognized result of reduced signal fluctuations.

Regarding claims 1 and 2, it would have been obvious to a person of ordinary skill in the art to specifically provide an amount of overlap such that the combined width of the beams is 1.5 times, 2 times, or more than a width of one beam in the system disclosed by Korevaar as an engineering design choice determined by a matter of routine experimentation to optimize the amount of the already-disclosed overlap.

Regarding **claim 4**, Korevaar further discloses that the plurality of light-emitting units emit light beams toward the other apparatus such that longer diameter direction axes of irradiation patterns of light beams from at least two of the plurality of light-emitting units intersect at the light-receiving unit. Beams 78a and 78b shown in Figure 5B, for example, diverge and intersect with beams 78c and 78d in the “longer diameter direction axes” at the receiver.

Regarding **claims 5 and 6**, Korevaar discloses that each of the light-emitting units includes a light source comprising a semiconductor laser 26 and an optical system which condenses light emitted from the light source (column 5, lines 16-39; column 6, lines 33-39).

Regarding **claim 7**, Korevaar suggests a free space optics communication apparatus as discussed above with regard to claim 1, and further discloses another apparatus (i.e., an opposing transceiver 16b as shown in Figure 2) which has a light-receiving unit (receiver 34, shown in Figure 3) which receives light beams irradiated from the free space optics communication apparatus

Response to Arguments

5. Applicant's arguments filed 12 December 2006 with respect to claims 1, 2, and 4-7 have been fully considered but they are not persuasive.

Examiner respectfully disagrees with Applicant's assertion on pages 11-12 of the response that Korevaar does not disclose a direction of overlap of laser beams. On the contrary, Examiner respectfully notes that Korevaar discloses that "irradiation patterns of light beams from at least two of the plurality of light-emitting units overlap in the shorter diameter direction of the irradiation pattern" as recited in claim 1 at least in the sense that they disclose an arrangement of two elliptical irradiation patterns 78a and 78b as shown in Figure 5B which, given the divergence of the beams expressly disclosed by Korevaar, eventually "overlap in the shorter diameter direction of the irradiation pattern" at the receiver. The elliptical irradiation patterns 78c and 78d shown in Figure 5B also diverge and overlap in the shorter diameter direction of the irradiation pattern at the receiver.

Since Korevaar explicitly discloses a direction of overlap as recited in the claims, Examiner respectfully submits that Applicant's argument on page 12 of the response is moot with respect to the obviousness of providing the claimed overlap direction or appreciating that the variable of overlap direction "is result effective."

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


CHRISTINA LEUNG
PRIMARY EXAMINER